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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/743,237	12/22/2003	Pazhayannur Ramanathan Subramanian	136721-1	6973
6147	7590	12/07/2006	EXAMINER	
GENERAL ELECTRIC COMPANY GLOBAL RESEARCH PATENT DOCKET RM. BLDG. K1-4A59 NISKAYUNA, NY 12309				SHEEHAN, JOHN P
ART UNIT		PAPER NUMBER		
		1742		

DATE MAILED: 12/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/743,237	SUBRAMANIAN ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	John P. Sheehan	1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 29 September 2006.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-56 is/are pending in the application.

4a) Of the above claim(s) 1-47 is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 48-56 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 12/22/03

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_

5) Notice of Informal Patent Application

6) Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Election/Restrictions***

1. Applicant's election without traverse of Group II, claims 48 to 56 in the reply filed on September 29, 2006 is acknowledged.

### ***Information Disclosure Statement***

2. The information disclosure statement filed December 22, 2003 fails to comply with 37 CFR 1.98(a)(2), which requires a legible copy of each cited foreign patent document; each non-patent literature publication or that portion which caused it to be listed; and all other information or that portion which caused it to be listed. The Examiner did not receive copies of references B1 to B4. References A1 to A4, the remaining references cited in the IDS, were considered by the Examiner.

### ***Claim Interpretation***

3. Applicants are advised that in claim 48, the claim language, "of making a bulk nanocomposite, wherein...nanoparticles comprises from about 4 volume percent to about 30 volume percent of the nanocomposite" appears in the preamble. A preamble is generally not accorded any patentable weight where it merely recites the purpose of a process or the intended use of a structure, and where the body of the claim does not depend on the preamble for completeness but, instead, the process steps or structural

Art Unit: 1742

limitations are able to stand alone. See *In re Hirao*, 535 F.2d 67, 190 USPQ 15 (CCPA 1976) and *Kropa v. Robie*, 187 F.2d 150, 152, 88 USPQ 478, 481 (CCPA 1951).

Accordingly, the claim language, "of making a bulk nanocomposite, wherein...nanoparticles comprises from about 4 volume percent to about 30 volume percent of the nanocomposite" is not accorded patentable weight.

#### ***Claim Rejections - 35 USC § 112***

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 48 to 56 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Throughout the claims applicants employ the terms "nanocomposite" and "nanoparticles". However, these terms are not defined anywhere in applicants' application. In view of the lack of specific definitions of these terms, the meaning, that is, the limits of these terms are not clear. For example, what is the size limit of a nanoparticle, 10 nm, 100nm...1000 nm, 2000 nm?

#### ***Claim Rejections - 35 USC § 102***

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1742

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

7. Claims 48 and 53 are rejected under 35 U.S.C. 102(b) as being anticipated by each of Benn et al. (Benn, US Patent No. 5,006,163 cited in the IDS submitted December 22, 2003), Gennari et al. (Gennari, US Patent No. 5,049,355, cited in the IDS submitted December 22, 2003) and Rousset et a. (Rousset, US Patent No. 5,462,903), cited in the IDS submitted December 22, 2003).

Each of the references teaches a method of making a composite with a metallic matrix material and a plurality of particles by mixing the metallic matrix material with a plurality of particles, consolidating the particle-matrix mixture (Benn, column 3, line 63 to column 4, line 20; Gennari, column 7, Example 1; and Rousset, column 6, Example 2). In view of the fact that, as explained above under the heading, Claim Interpretation, the claim language, "of making a bulk nanocomposite, wherein...nanoparticles comprises from about 4 volume percent to about 30 volume percent of the nanocomposite" is not accorded patentable weight, claims 48 and 53 encompass the process set forth in each of these references.

#### ***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1742

9. Claims 49 to 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Benn et al. (Benn, US Patent No. 5,006,163 cited in the IDS submitted December 22, 2003), Gennari et al. (Gennari, US Patent No. 5,049,355, cited in the IDS submitted December 22, 2003) and Rousset et a. (Rousset, US Patent No. 5,462,903), cited in the IDS submitted December 22, 2003). as applied to claims 48 and 53 above, and further in view of the admitted known prior art set forth in the applicants' specification at page 7, paragraph 0026 of the specification.

Each of Benn, Gennari and Rousset teaches and is applied as set forth above.

It is admitted in the specification that mechanofusion, mechanical alloying and cryomilling are known methods of forming nanoparticles (specification, page 7, paragraph 0026).

The claims and each of the primary references differ in that the primary references do not teach mechanofusion, mechanical alloying and cryomilling to form the particles used to make the composite taught by each of the references.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the use of the admittedly well known methods of making powder particles for use in the known methods taught by each of Benn, Gennari and Rousset does not lend patentability to the known method taught by each of Benn, Gennari and Rousset.

Art Unit: 1742

10. Claims 54 to 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over each of Benn et al. (Benn, US Patent No. 5,006,163 cited in the IDS submitted December 22, 2003), Gennari et al. (Gennari, US Patent No. 5,049,355, cited in the IDS submitted December 22, 2003) and Rousset et a. (Rousset, US Patent No. 5,462,903), cited in the IDS submitted December 22, 2003). as applied to claims 48 and 53 above, and further in view of the admitted known prior art set forth in the applicants' specification at page 8, paragraph 0029 of the specification.

Each of Benn, Gennari and Rousset teaches and is applied as set forth above.

It is admitted in the specification that the claimed methods of thermomechanically processing the nanocomposite as recited in each of claims 54 to 56 are known (specification, page 8, paragraph 0029).

The claims and each of the primary references differ in that the primary references do not teach the specific thermomechanically processing recited in claims 54 to 56.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the use of the admittedly well known methods of thermomechanically processing the powder compacts taught by each of Benn, Gennari and Rousset does not lend patentability to the known method taught by each of Benn, Gennari and Russet.

***Double Patenting***

Claims 48 to 56 are directed to an invention not patentably distinct from claims 53 to 74 of commonly assigned application Serial No. 10/743,236. Specifically, the claimed method in each of these two sets of claims overlap.

The U.S. Patent and Trademark Office normally will not institute an interference between applications or a patent and an application of common ownership (see MPEP Chapter 2300). Commonly assigned application Serial No. 10/743,236, discussed above, would form the basis for a rejection of the noted claims under 35 U.S.C. 103(a) if the commonly assigned case qualifies as prior art under 35 U.S.C. 102(e), (f) or (g) and the conflicting inventions were not commonly owned at the time the invention in this application was made. In order for the examiner to resolve this issue, the assignee can, under 35 U.S.C. 103(c) and 37 CFR 1.78(c), either show that the conflicting inventions were commonly owned at the time the invention in this application was made, or name the prior inventor of the conflicting subject matter.

A showing that the inventions were commonly owned at the time the invention in this application was made will preclude a rejection under 35 U.S.C. 103(a) based upon the commonly assigned case as a reference under 35 U.S.C. 102(f) or (g), or 35 U.S.C. 102(e) for applications pending on or after December 10, 2004.

11. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct

Art Unit: 1742

from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 48 to 56 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 53 to 74 of copending Application No. 10/743,236. Although the conflicting claims are not identical, they are not patentably distinct from each other because the claimed method in each of these two sets of claims overlap.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

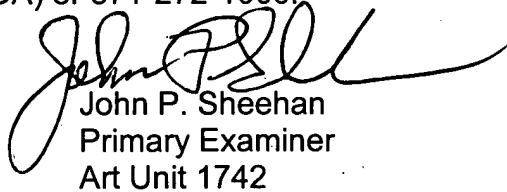
### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

Art Unit: 1742

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.



John P. Sheehan  
Primary Examiner  
Art Unit 1742

jps